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No. 4. July, 1912. Vol. V.

Bulletin

OF THE

Ontario Hospitals for the Insane

A Journal Devoted
to the interests of
Psychiatry in Ontario

Printed by Order of the Legislative Assembly

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FOR THE DEPARTMENT OF THE PROVINCIAL SECRETARY.

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PROCEDURE TO SECURE ADMISSION OF PATIENTS TO ONTARIO HOSPITALS FOR THE INSANE.

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(1) Where the property of a patient is sufficient, or his friends are willing to pay the cost of the Medical Examination, the family Physician should apply directly to the Medical Superintendent of the Hospital for the Insane, in whose district the patient resides, for the necessary blank forms. These being secured, they should be properly and fully filled in, dated, signed in presence of two witnesses by the medical men in attendance. They are then returned to the Hospital, and if satisfactory, and there is accommodation, advice will be sent at once to have the patient transferred. See R.S.O., Cap. 317, sections 7, 8, 9.

(2) Where the patient has no property, and no friends willing to pay the cost, application should be made to the head of the Municipality where he lives, who, after satisfying himself that the patient is destitute, may order the examination to be made by two physicians, and a similar course to the above is then followed. The Council of the Municipality is liable for all costs incurred, including expenses of travel. See R.S.O., Cap. 317, section 11, subsections 1 and 2.

(3) Where the patient is suspected to be dangerously insane, information should be laid before a magistrate, who may issue a Warrant for the apprehension of the patient, and if satisfied that he is dangerously insane may commit the patient to the gaol, or some safe place of confinement, and notify the Medical Examiners. The Magistrate should then send to the Inspector of Prisons and Public Charities, Parliament Buildings, Toronto, all the information, evidence and certificates of insanity. The costs incurred by this method form a charge against the County, City or Town in which such patient resided. See R.S.O., Cap. 317, sections 12 to 20.

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The Bulletin

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Ontario Hospitals for the Insane

*A Journal Devoted to the Interests of
Psychiatry in Ontario.*

SOME FACTS THE GENERAL PRACTITIONER SHOULD KNOW REGARDING THE TREATMENT AND CARE OF THE INSANE.

BY WILLIAM MABON, M.D., NEW YORK.

Superintendent and Medical Director, Manhattan State Hospital, Ward's Island.

It is the prevailing, but erroneous, belief that insanity, one of the most fearful afflictions that besets humanity, is in all cases a hopeless condition. It removes from the family the wage earner, the housekeeper, the parent or the child, for an indefinite period of time. You, as physicians in general practice, first come in contact with this condition in its incipiency, and my purpose to-night is to bring to your attention the progress recently made in the treatment of the group of diseases classified under the general term " insanity," and the steps to be taken by you to secure the advantages of modern scientific treatment for your mental cases. I hope to help you, and through you your patients, to a better understanding of the means provided by the State for the care of these unfortunates. We believe that the good accomplished in the State hospitals can be much augmented by securing the active cooperation of the medical profession and the public in our work, both with the idea of preventing attacks of mental disease whenever possible, and with shortening attacks by early treatment.

In this great city, the second largest in the world, where practically all the public charitable and correctional agencies are under municipal control, it is not realized by the people generally that the insane are, and have been for many years, State charges, and that the institutions for their care and treatment are enitrely under State supervision and control. * * * * * * *

The method of examination and keeping case records at the hospital is of a thorough and comprehensive character. There thus results a mass of records, which, valuable as they are in further elucidating psychiatrical problems, are none the less of the greatest value as a guide in directing intelligent therapeutic effort.

Every patient on admission is at once placed in bed, there to remain until the physical examination is completed, the result of which determines the necessity for further rest in bed. Immediately after arrival a superficial examination is made for marks of identification, injuries, and any serious disorder requiring immediate attention, all of which is duly recorded, as is the treatment instituted. Later, more extended physical examination is made, following a general outline, which embraces all necessary points of inquiry in the ordinary case, but which at the same time calls for the most detailed examination of any abnormal condition. While such outline is closely followed, the record of the examination is typewritten upon blank sheets, thus avoiding printed forms which tend to mere routine work. The examiner is thus allowed all latitude in expressing his findings, while, following the outline as he does, no point is overlooked.

A brief survey of the outline shows its comprehensive character. With a paragraph for a description of the general type, appearance, and condition, including anthropological makeup, general state of nutrition, evidence of acute or chronic disorders, the neurological examination is first undertaken following the segmental development of the nervous system. Thus, after a paragraph devoted to general and subjective sensations, the special senses are first examined in their segmental order. Then the condition of the cutaneous sensibility is determined, including subjective complaints, stereognostic sense, sense of position, etc.

The examination of the vasomotor and trophic conditions follows, and in turn the various motor functions are examined, both deep and superficial reflexes are tested, the presence or absence of fibrillary twitchings is noted, while tremors and conditions of speech are made objects of special inquiry. In aphasic conditions a special detailed outline is followed, which is, of course, unnecessary in the majority of cases admitted. The condition of the organic reflexes and their control is determined, the question of convulsions is inquired into, and a paragraph is devoted to the matter of sleep and dreams, respectively.

Following the above, the ordinary physical examination of the thoracic organs is made, the condition of the digestive and abdominal organs ascertained, while a paragraph is devoted to the urinary and genital apparatus, respectively. After the completion of the whole physical examination it is customary to summarize the essential findings, thus avoiding the necessity of searching the detailed record for the most important abnormalities.

The mental examination is then proceeded with, when there are no physical contraindications, likewise following a detailed outline. An effort is first made to obtain an idea of the spontaneous mental activity, and the nature of the stream of thought when uninfluenced by the examiner. Thus, when the patient is spontaneously productive, a sample of the talk is recorded without questions being addressed, but when it is necessary to use questions only the simplest ones are employed, such as inquiries as to the patient's name, occupation, etc., special attention being given to any indication of acceleration or retardation in the stream of thought. As it is of great importance to form an idea of the setting in which the talk is produced, the motor reactions are set forth under this heading, showing whether the patient be in a restless, retarded, rigid, or other unusual motor condition when speaking.

The next division of the mental examination is the general mental attitude, which includes inquiry into the emotional reaction and special moods, with a detailed analysis of delusional and hallucinatory states.

Orientation and mental grasp are next determined, this being a special inquiry into the condition of the sensorium as regards the patient's knowledge of time, place, and personal relations.

Memory of the recent past is determined, and then as the patient is induced to give data of his life, one is able to judge as to the memory of the remote past. Under the heading of personal data the examination is extended to all matters occurring throughout the patient's life which may be deemed to have any bearing upon the situation.

Retentive power is determined, the patient's grasp on school knowledge and general information is ascertained, and the latter is then compared with the educational opportunities afforded the individual in question. The same is done regarding the ability to count and calculate, read and write, a specimen of the writing being filed whenever possible.

An idea of the patient's insight regarding his own condition and his general judgment is sought, and the mental examination is then concluded with a paragraph detailing the general attitude and manner. A summary paragraph is made similar to the one following the physical examination, wherein the important diagnostic points are grouped together and where it is possible to find the more important deviations from the normal. Of course, if the patient be in a delirious, stuporous, or mute state, we have to content ourselves by limiting this detailed examination, and in such instances the attitude and manner are more fully described, including the motor reactions, every effort being made to obtain differential diagnostic points in this matter.

While the above general outline is followed whenever possible, the rule is invariably observed of fitting the examination to the individual patient, so if a patient is weak, the mental examination is conducted in brief intervals, until all the various points have been inquired into. In addition, it may be stated that a woman physician makes a gynecological examination of all female patients, while the usual laboratory tests are employed whenever indicated, and urinalysis, of course, being always performed.

Staff meetings are held for two hours daily, at which every patient admitted is presented in turn by the physician making the initial examination, he incorporating in the record such information as has been obtained from the patient's friends, other hospitals, or any other source. A free discussion takes place, from both a diagnostic and therapeutic standpoint. Such discussion is recorded by a stenographer present and is later typewritten, forming a part of the case record. The tentative diagnosis and therapeutic suggestions thus represent the opinion of the whole staff and not of any one physician.

With the typewritten records thus obtained, treatment can be intelligently inaugurated with the view of alleviating the mental as well as any physical disorder that may exist. At frequent intervals additional notes are made as to both mental and physical condition, including also a record of the treatment, with the results observed from day to day.

In addition to this original presentation, every case is presented a second time, usually two or three months after admission, when a summary is read embodying the essential features of the entire clinical record, including the result of treatment. The physician writing the summary makes a differential diagnosis, and the final diagnosis is then determined. As a commentary upon the thoroughness of the original examination, it may be mentioned that the final summary diagnosis agrees with the tentative diagnosis made on the original presentation in approximately 90 per cent. of the cases, the remainder being obscure and anomalous cases, in which prolonged observation is necessary to arrive at a correct understanding of the condition.

At the time of summary, if the patient's condition admits, the question of discharge or parole is considered, likewise after a free discussion by the staff. Suggestions are made, conclusions reached, and all circumstances pertaining to the patient thoroughly expounded. Thus every patient entering the hospital appears at the staff meeting twice, while cases which have not sufficiently improved to warrant their leaving the hospital when summarized are presented for the third time before they are discharged or paroled. In this manner no patient leaves the hospital until all the conditions attendant upon the case have been thoroughly analyzed, and it is thus possible to intelligently advise the patient as to the future.

When the case is to be presented for summary, the following letter is sent to the family physician wherever possible:

STATE OF NEW YORK—MANHATTAN STATE HOSPITAL,
WARD'S ISLAND, NEW YORK CITY.

WM. MABON, M.D.,

Superintendent and Medical Director.

...............19....

DEAR DOCTOR—It is strongly felt by many of those engaged in the care and treatment of the insane that a closer co-operation between the family physician and the hospital physician would do much toward developing more effective measures for the prevention and management of mental disorders. Some of the most common psychoses develop slowly out of conditions which might be recognized and dealt with by the general practitioner long before hospital treatment becomes necessary.

It is unfortunate that the practitioner nearly always loses track of the case after the patient is admitted to the hospital. The family physician can frequently supply the hospital physician with many facts helpful for the understanding and treatment of the case; furthermore, his continued interest will do much to inspire confidence in the patient and secure more ready acquiescence in the necessary detention in the hospital.

A former patient of yours................ was admitted to this hospital on .... At the regular staff meeting to be held .... this case will be presented for discussion as to the diagnosis and treatment.

I beg to enclose for your information a summary of the clinical history of the case, and to express the hope that you will be able to attend the staff meeting, which will be called at 8.30 A.M., and last until 10.30 A.M. If you are unable to attend, we would be glad to have any suggestions from you in reference to this clinical summary.

The most convenient way of reaching the hospital is by way of the surface, elevated, or subway trains to 116th street and the 116th street crosstown car to within one block of the East River. The hospital boat leaves its dock at the foot of East 116th street on the even and half-hour.

Will you kindly notify us if you will be able to attend?

Very truly yours,

SUPERINTENDENT.

As a part of the medical work, autopsies are held in approximately one-third of the deaths and once a week at a meeting of the entire staff the clinical facts are discussed in connection with the pathological findings.

As regards specific medical and surgical treatment, it may be summed up in the statement that the insane require the same treatment for like conditions as to the sane. It is our contention that the State hospitals provide as good hospital care for the various physical disorders presented as do the general hospitals. While, of course, it is generally known there is no specific treatment for any form of psychosis, the general hygienic treatment is of the utmost importance, and in this connection one may speak of the open air camps which have been established at the Manhattan State Hospital. Here, certain selected patients improve much more rapidly than in the closed wards, simply as a result of their outdoor life.

The value of the open-air treatment has always been recognized in institutions for the insane, and it has been the practice to keep most of the patients out of doors during recent years that its specific value has been appreciated and suitable plans adopted for its special use.

In 1901 the late Dr. A. E. Macdonald introduced tent life for the care of the tuberculous insane at Ward's Island. Following this experiment, it was found that this life had a remarkably good effect on feeble and untidy patients and later on the convalescent class also. In 1904 the late Dr. Emmet C. Dent, superintendent of the Manhattan State Hospital, West, inaugurated this treatment for the acute insane and fully equipped camps were erected for those suffering from acute delirious conditions, anemia, insomnia, and the various physical ailments coincident with the acute insanities. Dr. Dent began his work with tents built on wooden platforms, each accommodating twenty-five patients. These tents were heated with iron stoves and were supplied with closets and running water. It was found, however, that during wet and stormy weather the tents had to be kept closed when ventilation became difficult. As a result of this experiment, a structure was built of wood and glass, in size twenty by seventy feet, and accommodating twenty-five patients. The sides are movable so that if desirable there need be absolutely nothing operating in the nature of an enclosure. These structures proved so satisfactory that they have been greatly extended, particularly in the women's part of the hospital. They are lighted by electricity, have steam heat, steam tables for warming food, water closets and baths, in fact every sanitary requirement. The more robust patients take their meals in the adjacent dining-room, while food is brought to those who are weak and feeble. The last of these buildings erected was for the tubercular women. It has a sitting room attached and a special dining-room easy of access, and separate from the others classes of the insane. In selecting patients for the camp, aside from the tubercular, no discrimination is made because of violent or suicidal tendencies, and through the six years that these camps have been occupied, only one calamity has occurred, although their proximity to the water would naturally appear to be dangerous. After the acute cases have been under treatment sufficiently long to improve the general health, we notice that the insanity is either well on toward recovery, or we are in a position to make a more accurate prognosis. In a certain group of cases there is no more important restorative that a sufficient amount of sleep. Under treatment in the camp, the constant exposure to fresh air and sunlight tends to bring about a normal amount of rest and oftentimes the patients reach in the course of a month an average of six to eight hours' sleep out of the twenty-four. Aside from the hygienic advantages derived from these camps, the moral effect upon the insane has considerable influence toward their recovery. The freedom from the restraint of bars and locked doors, together with the wide open windows, is appreciated to such an extent that vacancies in the camps are eagerly sought by the more intelligent class of patients.

Of any single therapeutic agency, however, in the treatment of the insane, it is scarcely to be denied that hydrotherapy is of the first importance. Both hot and cold packs are extensively employed, the hot air bath is important as an eliminating procedure, while the various showers and douches all have their special indications.

The disturbed insane have hitherto formed one of the most difficult groups of cases to treat successfully, but with the introduction of the continuous bath, we now cure approximately 95 per cent. of acute maniacal conditions. The patient lies upon a canvas sheet in a large tub, through which the water is constantly flowing at body temperature, and here a patient will sleep when unaffected by ordinary hypnotics. It may be said that scarcely any form of excitement exists but that is favorably influenced by this treatment. Of course, in senile cases with arteriosclerotic changes and in individuals suffering from gross cardiac or pulmonary lesions care must be exercised, but even such patients undergo prolonged bath treatment much better than might be anticipated, and with benefit in no other way. Indeed, such patients show less adverse symptoms than was formerly the case when their excitement was controlled by powerful hypnotics, with their attendant depressing effect upon the cardiovascular and muscular systems.

Manic depressive excitements are thus favorably influenced, although they usually respond less promptly than do the infective exhaustive and toxic conditions, in which improvement is usually shown within twenty-four to forty-eight hours. In fact this form of treatment is now regarded as absolutely essential in the care of the latter.

By means of the continuous bath, it may be said that the use of hypnotics has been largely reduced and drugs are never employed as a substitute for the prolonged bath, although they have their value in certain cases.

The hospital has two fully equipped operating rooms and the necessary sterilizing apparatus in connection with them. With a population of nearly five thousand, we naturally have a large amount of surgical work. Some minor operations are performed by members of the staff, but this work is largely done by visiting surgeons from the city, members of our board of consulting physicians and surgeons. Active clinics are held by different members of this consulting board and I wish here to express my appreciation of the work of these gentlemen who give freely of their time and skill for the benefit of those committed to our care.

The institution is provided with facilities for the administration of electrical treatment and in certain selected cases this proves of much value. An oculist and dentist visit the institution regularly for work in their respective fields. A trained masseur is employed by the institution. Extra diet is part of the routine treatment in all cases where it is indicated. A training school for nurses is maintained and is under the immediate charge of a Bellevue graduate. This school is registered with the State Department of Education at Albany and gives a very thorough course, especially in mental nursing. There is a considerable demand for our graduates to take charge of private cases.

In the treatment of mental diseases, amusement, diversion, and occupation deservedly occupy a very important place. Perhaps in no particular is the difference between the new and the old regime more marked. Formerly the insane were locked in wards with nothing to do and no opportunity for exercise, except possibly in a barren yard surrounded with a high fence. The bare walls, heavily barred windows, and heavy, crude furniture fastened to the floor were in marked contrast to the modern open-air camps, for instance, photographs of which I have distributed. We strive to interest our patients in some form of industry or amusement—anything to prevent the brooding and introspection so common and so harmful to the insane. Many of the women work in the sewing rooms, others in the laundry, the kitchens, the dining-rooms; some will show an interest in caring for the ward. Some will take up fancy work, embroidery, tatting, Mexican drawn work, and the like. Work in raffia and in brass has recently been introduced in the wards. For the men there is the work on the grounds, in the gardens, in the various mechanical shops, in the tailor and shoe shops, making mats and mattresses, and bakery, kitchens, clerical work, and running errands. These patients work an average of five or six hours a day. The work is assigned by the physicians as a part of the treatment and the nurses make every effort to interest their charges.

For amusement and diversion there are games, such as cards and checkers in the wards, dances and concerts in the different wards, in the amusement hall and out of doors in summer where we have a large platform for this purpose. Two bowling alleys are maintained for patients' use. In the summer four excursions a week are given on the hospital steamer, about two hundred patients going on each trip. We have recently introduced folk dancing and singing games and these have proven of value. The women have shown much interest in this diversion. A baseball team of employees plays exhibition games with visiting teams from the city and the patients themselves occasionally play. Field day sports are held Decoration Day and Labor Day in which patients compete for prizes; these events are greatly enjoyed. Through the kindness of theatrical friends of the hospital, vaudeville entertainments by high-class artists are given frequently during the season. On the various holidays throughout the year some of the wards give entertainments, the different numbers on the programme being given almost entirely by patients. Every Friday afternoon a party is given by the women who are convalescing and an informal programme is rendered. These parties arouse much interest and started originally by a nurse reading to some convalescent patients while they were doing fancy work. From this simple beginning the work has developed until now in point of attendance and quality of programme given these meetings will rank with some of the women's organizations in the outside world. The hospital has two libraries for patients' use and these are added to from time to time. The Hospital Book and

Newspaper Society furnishes newspapers and magazines for the different wards. One of the Jewish papers furnishes ten copies daily for the benefit of those reading that language. Many of the wards have pianos and each ward has its musicians to play for them. The hospital maintains its own orchestra and there are a number of phonographs in use, some purchased and others provided by friends of the institution.

For the religious instruction and comfort of its inmates, the hospital provides three chaplains, one for each faith, Catholic, Protestant, and Jewish. The ministrations of these clerical gentlemen afford much solace to our patients.

When a patient has improved to such an extent that it seems wise to give him a trial outside the institution with his friends, it is the usual custom to grant him what is known as a "parole." This means that he is still carried on the hospital records and can be returned any time within the parole period without the formality of a recommitment. Paroles are from one to six months, most of them for the latter period. During this time the patient reports frequently to his former ward physician and his progress is noted. If he does well outside, his formal discharge takes place at the end of six months. About ten per cent. of all cases paroled return within the time, many of them of their own volition. In order to bring home to friends so far as possible the importance of this period in the patient's life, the following letter of advice has been prepared and is handed to them when he leaves the hospital:.

STATE OF NEW YORK—MANHATTAN STATE HOSPITAL,
WARD'S ISLAND, NEW YORK CITY.

To the Friends of Patients:

The superintendent begs leave to offer the following advice for the benefit of the patient who is leaving the hospital, with the view of perventing, if possible, a return of the mental attack:

Those conditions and surroundings which operated in bringing about the first attack should be avoided and, as far as possible, remedied. Where the surroundings were objectionable, a change should be made in residence. Bad associates should by all means be avoided. In order to effectually change the surroundings and associates, it is frequently necessary to move to another section of the city, or even leave town and take up life in another community.

Oftentimes it is embarrassing to the patient to have the subject of the former residence in the hospital discussed. See that the patient avoids all forms of dissipation; endeavor to keep the patient occupied and establish regular hours for meals and retiring. During the summer months, where it is possible, it is well for the patient to go to the country for a short time at least. The home life should be made as pleasant as possible and friends should endeavor to encourage and help in every way.

Inasmuch as it is the practice of this institution to parole for a period of six months before discharging a patient, it should be considered a duty on the part of relatives to encourage the patient to return to the hospital once a week during the parole period to consult with his former *ward physician* in reference to the progress of his convalescence, and to seek from him advice as to the best mode of living. The patient, at the same time, should have instilled into his mind that the idea of these regular visits to his physician is not for the purpose of his possible return to the institution, but rather to prevent a recurrence of his disease, and hence the necessity for a recommitment.

Whenever a paroled patient declines to return to the institution, it is well to keep him under careful observation, and in case of any illness, or a suspicious symptom of his former malady, the family physician should be immediately consulted, and then if advice is desired, a letter addressed to the superintendent will receive a prompt answer.

William Mabon, M.D.,
Superintendent and Medical Director.

In connection with discharges, I would state that we frequently have much difficulty in persuading friends to allow the patient to remain until fit for a trial outside. In many cases as soon as he has shown a slight improvement, and while still in a very unstable mental state, the relatives become insistent for discharge, overlooking the obvious fact that a return to the environment in which the breakdown occurred, at such a time, would be about the worst possible thing for the patient. The law provides two ways for the possible discharge without the consent of the superintendent. One is by writ of habeas corpus. Quite a number of these are issued during the year, but in nearly all cases the courts have denied the writ and remanded the patients back to the hospital. The other method of discharge is by bond guaranteeing good behaviour and maintenance provided the relatives can satisfy the court that the patient will receive proper care. Our experience is that the courts are usually reluctant to discharge an insane person against the advice of the superintendent and require definite assurance as to the provision the relatives propose to make.

For patients with no friends able to assist them, there has been developed, through the co-operation of the State Charities Aid Association, a system of after-care, to look after and see them through the critical weeks of their parole. The Manhattan State Hospital After-Care Committee was formed early in 1906, being the first organization of its kind in the United States. About one hundred cases a year are referred to this committee and its agent makes an average of five visits in behalf of each patient. Employment is secured for about thirty each year and supervision in all cases is continued until they are doing well and have become self-supporting. Some are assisted with clothing or money, some sent to the country, others have board provided until employment is secured. Where home conditions are unknown and thought to be of rather a low standard, the agent makes a visit and reports her observation to the physicians. Many cases referred to the After-Care Committee are turned over to existing charitable and relief organizations and receive help in this way.

I consider this work of after-care of vast importance from the economic, the social, and the humanitarian point of view, as well as that of a superintendent. It fills a need we have felt for years and for which there was no adequate provision before the After-Care Committee was appointed.

Prophylaxis is the keynote of modern medicine, and the old proverb, " An ounce of prevention is worth a pound of cure," is nowhere more true than in the realm of psychiatry. The principal exogenous factors in the production of insanity are those twin scourges of humanity—alcohol and syphilis, both avoidable causes.

In the prevention of insanity, there are two fields to cover, the first being to make the most of the recoveries and avoid relapses, and in this we receive valuable aid from the After-Care Committee. The second, and more important by far, is to prevent, or at least abort, the initial attack. This, gentlemen, is largely in your hands. Persuade your mental cases that the institution should not be considered the last resort, but the first. Tell them that many forms of insanity, if taken right at the beginning, are amenable to treatment; that there is nothing to gain and everything to lose by delay. As in physical diseases, so with mental, there are certain forms in which the prognosis is unfavorable, but even in these early treatment may do much to relieve the patient's distressing symptoms.

The deep-rooted prejudice against the hospital for the insane dies hard, but we hope and believe the time is coming when the person mentally unwell will turn to the institution as freely for help as he now does to the general hospital for treatment of his physical diseases. When that shall occur, and it is recognized that insanity is a disease and not a disgrace, then the medical profession will have achieved another great triumph for humanity.

TWO CLINICAL CASES.

DR. J. WEBSTER.

Hospital for Insane, Hamilton.

The following two cases, widely different in type but interesting as being typical examples of the forms of mental disease which they represent, are especially interesting in view of the sudden disappearance of all mental symptoms in each.

The first case, exhibiting a paranoidal condition, will require careful supervision to prevent, under stress, a return of the mental trouble, owing to his constitutionally hypersensitive, introspective temperament; but after a period of twelve months of complete immunity he is reported as being better, mentally and physically, than for years.

In the second case, a collapse delirium, there is no reason under ordinary circumstances to anticipate a recurrence. The patient has been under observation since her discharge, and is the picture of mental and physical health. In this type of mental disease a sudden clearing of consciousness is not unusual, and this case is only remarkable for the almost instantaneous completeness of the recovery.

Case No. 1:

Mr.————aged 27 years.

The family history is negative.

Patient is the son of refined, educated parents, in comfortable circumstances. He was a healthy child and received a good high school education. When 14 years of age he had typhoid fever but made a good recovery. His habits were good in every way, and he neither drank nor smoked. In disposition, although not shy, he was extremely proud and sensitive, having few associates. After leaving school at the age of 16 he entered a bank, where he remained five years. He was advanced rapidly and severed his connection with the bank voluntarily, hoping to better his prospects. As indicating his hypersensitive temperament, which undoubtedly was responsible for the delusions later to develop, it may be mentioned that while at the bank he worried over the routine weekly auditing of his cash account, as reflecting on his honesty. During this period he did not associate with his fellows and was not sociably inclined. His chief recreation was in solitary walks. After leaving the bank he went to the southern states and for three years held a responsible position with a large manufacturing concern. About a year after going south he married. His married life has been very happy and two children resulted.

His next business venture was on his own account as a manufacturer's agent. At this he remained two years, but was not very successful and gave it up to accept a good position as travelling salesman for a large steel manufacturing concern. Here, he was eminently successful, but had to work very hard. The southern climate did not agree with him; and he was much under his normal weight, but was never specially ill.

In May, 1911, he went on a business trip to Mobile, Ala., and here delusions developed. He had been subjected to considerable annoyance and worry at the hands of a fellow salesman because his expense account was much less than that of the other salesmen, and in Mobile he imagined that two spies were following him to keep tab on his expenses. Although he did more business than he had ever done before in this city, he imagined his customers acted strangely towards him, e. g., a customer would give him an order and say, "This will help you out," and he imagined that they had been told he was in difficulties. Patient called up his manager by telephone and told him of the spies shadowing him. The manager ridiculed the idea and sent him on a side trip to straighten up some business, which patient thought unnecessary. He then returned to headquarters and again told his manager he had been shadowed. This gentleman saw at once that patient was not well, told him he must take a rest and sent him north with his family, the company paying all expenses. He was treated with exceptional kindness by various officials of the company in the north, but these acts of kindness he misinterpreted and suspected something underhand. He still thought he was being shadowed and looked for a hidden meaning in all that was said or done for him. During this period he developed grandiose ideas. He recalled a remark of one of his customers that he was too good for his job, and conceived the idea that a high position with the United States Steel Corporation was waiting for his acceptance. He made a trip to New York, visited the head office of this Company; and as he himself puts it, made a fool of himself, and was promptly landed in Bellvue Hospital. Here, he remained for three days when he was taken to his father's home in Ontario. After grandiose ideas appeared, he affected mannerisms in speech and deportment, and also put himself on a restricted diet, so that he might be better fitted for the position for which he felt himself destined. These peculiarities of conduct and grandiose ideas persisted while he remained at his father's home and were present when he was admitted to this institution, July 22nd, 1911. He thought he was the cynosure of all eyes and that he was recognized as a person of distinction.

When admitted he was much run down physically, being about twenty-five pounds under weight. For four days there was no change in his condition. On the fourth day he overcame his reticence and told me his story. Without anticipating that what I said would bear any fruit, I told him his story was a fabric of delusions. He was not convinced, but did not resent my statement. On the following morning he told me he had spent the night thinking over what I had said and that the truth had suddenly dawned on him. His whole demeanour was changed and until he was discharged six weeks later he never referred to his former delusions other than in ridicule. There was no reason to suspect that he had simply forced his delusions to the background; they had completely disappeared. He rapidly gained his normal weight. At my request he wrote a history of his case, and in concluding he remarks—"I might add that all this foolishness seemed perfectly logical to me at the time."

Case No. 2:

Mrs.———— admitted May 25th, 1911, aged 42 years.

Family history is negative.

Patient was born in Ontario of well-to-do parents, and had always been accustomed to every comfort. She was a delicate child, but bright mentally, and learned readily at school. Menstruation commenced when she was twelve years old and since has always been accompanied by considerable pain and distress. In disposition she was vivacious, affectionate, optimistic and fond of society. She married at the age of 20 and has had two children. One died, aged five, of acute rheumatism; the other is alive, aged twenty and appears to be a specially bright and intelligent young man.

Although always delicate, patient had no acute illness previous to her marriage, but at the birth of her first child the perineum was torn and not repaired. Following this, the uterus prolapsed. These conditions remained until July, 1910, when they were corrected by operative measures. In the meantime she had worn uterine supports, but her general health suffered, and she was always more or less nervous and high strung, especially at menstrual periods. About ten years ago she had appendicitis, but recovered without an operation. Some years ago she had pneumonia. About three years ago she had an attack of what her physician diagnosed as "Spinal Meningitis." She was ill for two months but made a good recovery. After the operation, previously alluded to, patient's health improved greatly, and she was better than she had been for years, but in January, 1911, she had an attack of pleurisy, and was in poor health when it was discovered that her husband had been guilty of embezzlement. He immediately left for parts unknown, a fugitive from justice. Patient was prostrated, and her physician advised that she go to the home of some friends. This she did, but fretted continually and was unable to sleep. Her physical condition was such that she was confined to bed, but when she learned that her husband had been apprehended and brought back to Canada, she immediately returned home and visited him daily in the gaol during the three weeks that elapsed before he was sent to the penitentiary. She bade him good-bye at the station on his departure for Kingston and collapsed immediately. She was removed to her sister's home, where she remained for four weeks and was then brought to this institution. From the first she was deeply clouded and presented the typical symptoms of an exhaustion psychosis—vague hallucinations, aimless groping about, emotional instability, changeable fantastic delusions, etc.

On admission, patient was in an utterly exhausted condition, temperature slightly subnormal, pulse accelerated, tongue dry and coated, but she was restless continually, and had no conception of her surroundings. She was visited by her son, but failed to recognize him. Nourishment was pushed, and she gradually gained in strength, but mental symptoms continued unabated until June 18th, when she was again visited by her son. She recognized him at once, and immediately complete consciousness returned. She said a weight seemed to drop from her, and her mind became clear at once.

From this time she gained weight rapidly, and was entirely free from abnormal mental symptoms. She stated that from April 28th, when she parted from her husband, until June 18th, everything was obscure. She shewed great curiosity to hear of her doings and sayings during this period, and when they were recounted to her she indistinctly remembered some of them.

When she was granted a probational discharge on July 8th, she had regained her normal weight, and when seen recently she was the picture of health.

ETIOLOGY AND PATHOLOGY OF EXOPHTHALMIC GOITRE.

By W. T. McConnell, M.D.

Rockwood Hospital, Kingston.

Since the work of Mobius, 1886 (1), and of Greenfield, 1893 (2), the symptoms of exophthalmic goitre have been recognized as those of hyperthyroidism, the effects of an excess of thyroid secretion beyond body requirements, either to utilize or to neutralize. The exact physiological function of the thyroid and its secretion cannot be said to be yet definitely known, but it might prove of advantage in later discussion, if I should give what appears to me to be the present status of our knowledge of the nature and action of this secretion. The normal secretion of "colloid" is formed by the epithelial cells of the thyroid alveoli and formation of

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*Read at meeting of Ontario Medical Association, May, 1912, in the symposium on Exophthalmic Goitre.

this "colloid" would appear to be the sole function of the organ. Analysis of this "colloid" has shown that its main active constituent is a globulin, thyreo-globulin—whose molecule is Iodine containing or Iodine binding, the iodine portion being separable, though bound to protein fraction as thyreo-iodine or iodo-thyrin. In addition to this, there is present in the colloid, a nucleo-proteid body, usually in small amount. It would be of no service to detail here the work of those who have investigated these active constituents. Probably on this continent the work done by Beebe (3) and Rogers (4) is that best known as a study of these constituents, their isolation, mode of action and the principles of therapeutics based thereon. Their work goes to prove that the nucleo-proteid portion of the secretion has a markedly stimulating effect on the sympathetic system, and that repeated injections of small doses soon produce in healthy individuals, such symptoms as tachycardia, cutaneous flushing and sweating, digestive disturbances, nervous irritability and even tremor. Injections of the globulin, on the other hand, into healthy individuals, act as a general systemic stimulant and require large doses and a longer period to produce symptoms like those following the use of nucleo-proteid. Indeed, Beebe, and Rogers claim that such symptoms when developed can very largely be ascribed to nucleo-proteid unseparated from the globulin in extraction. Normally then the globulin is the main constituent, acting as an accelerator of metabolism, increasing oxidation and the metabolic activities of nitrogenous and fatty tissue, while the nucleo-proteid exerts its effects on the sympathetic system, but in normal secretion its amount, and consequently its import, is small.

Investigators have shown a close relationship in activities between the thyroid and other glands and tissues of body, but more especially the adrenals, pancreas and generative glands. Time prevents a discussion of such relationship, though they have a bearing on topic under discussion, as alterations in these particular organs are without doubt, factors of much import in the etiology of a number of cases of both simple and of exophthalmic goitres.

Undoubtedly in etiology, the simple or parenchymatous goitres and exophthalmic goitre have many factors in common. In simple goitre we find females most commonly affected, and we recognize as factors the increased demands made upon the thyroid at puberty, during pregnancy, and occasionally at the menopause. We find certain other cases follow on some of the infectious diseases, no doubt due to the action of their toxins, either on thyroid itself or on some other organ. Endemic goitre has long been associated with impurities in drinking water, the exact nature of which is unknown. McCarrison (5) has quite definitely proven this association in the endemic goitres of Gilgit in the Kashmir, and proven that it is the suspended matter in the water that is at fault, but the mode of action of such material is still open to discussion. In such simple goitres the histological alterations are those of simple enlargement with retention of normal characters, and with more active colloid formation, the colloid staining, like that of normal gland. Now, exophthalmic goitre has similar underlying factors. It affects females at least eight times as frequently as males, its age incidence is from 15 to 40, but is not so apt to occur at puberty. A history of infectious disease can be elicited in many cases. It certainly is much more common in localities where simple goitre is prevalent and in families with goitre, and we can take this last as a sign that such families have some inherited deficiency in their thyroids.

The work of Beebe and Rogers would go to show that so long as the demand for increased secretion can be met by production of a secretion of normal composition, that is, with the globulin and its normal iodin content, that there is little danger of development of an exophthalmic goitrous state, but we have only the simple or parenchymatous goitre. But with further demands the character of the secretion may alter and be evidenced by distinctive pathological alterations in the gland itself. These investigators and others have shown that extracts from the glands in exophthalmic goitre are much richer in nucleo-proteids than is the normal gland, or the gland in parenchymatous goitre, and further that the colloid is frequently relatively poor in globulin, and especially in its iodin content. This would go to prove that to this alteration in the character of the secretion, the symptoms are due, as the nucleo-proteid, as has been previously pointed out, has a markedly stimulating effect on the sympathetic system and on this effect depends the symptom complex of exophthalmic. Rogers' hypothesis is that the alteration in the gland tissue and in character of secretion is a fatigue phenomenon, its onset varying with the capacity of the thyroid cells to continue to produce a normal secretion, and also the capacity of the tissues to utilize this and neutralize any excess. He compares the process in the thyroid to the well-known effect of continuous electrical stimulation of the salivary glands, where at first an increased normal secretion is obtained; with fatigue a more watery secretion, gradually losing all its active constituents, but in the thyroid the stimulation is essentially less active and longer continued. Adopting this view, it would appear then that exophthalmic goitre is dependent on same factors as simple parenchymatous goitre, but develops only in those whose thyroids are not able to continue to meet the demands upon them, arising as the result of metabolic, chemical or toxic irritants.

Pathology.—In practically all cases there is enlargement of the organ, but as a rule not of great extent, unless an adenomatous goitre be also present. At operations on such glands the surface veins are usually numerous, large and distended with blood, but this feature is not apparent after removal. The surface of the removed gland is usually firm and slightly nodular, but not markedly irregular. As a rule the enlargement affects the whole gland, but at times one lobe or even a portion of lobe may be particularly involved, and in a very few cases the alterations may be confined to islands of tissue, scattered throughout the gland. Considerable variations will be found in both gross and microscopic findings, depending on acuteness or chronicity of case, upon any secondary degenerative lesions and upon any accompanying adenomatous growths. Those who have had large experience in the examination of thyroids can outline with fair accuracy the character of symptoms presented by case from examination of the removed glands. Few of us here, in Ontario, have sufficient chance to acquire this proficiency, as none of our surgical clinics afford us much material for study.

The cut surface of gland in acute cases is of a yellow gray color, rather dull or opaque, due to absence of colloid in any amount, instead of the reddish, glairy surface of normal gland. If cases are of somewhat longer duration, the grayish opacity may not be so marked, and glair partially re-appear, due to presence of colloid not absorbed, while in chronic cases the gross appearance may not show marked departure from normal, except to eye of expert. Microscopically, there are very distinctive alterations. The alveoli in the normal gland are rounded, the lumen filled with colloid and the lining cells a single layer of cubical epithelium. In exophthalmic goitre the changes are irregularity in size and outline of the alveoli, some being very irregular and large, with, at times papillated projections into lumen; others small, so that epithelum occupies all alveolus. The cells are larger, more columnar in shape, show active proliferative changes, are at times heaped up or form double layers. The colloid is present in only small amount in the acuter cases, and is thinner and does not stain well with eosin as does normal colloid. In some cases considerable colloid is present of this thin nonstainable character. Kocher (6), remarks "The quantity of colloid in the vesicles is in inverse proportion to the severity of the symptoms." In a few cases, particularly those of long standing, there may be much colloid, partly non-staining and partly stainable, and here, no doubt, a degenerative process is established. In some cases rather extensive cell disintegration appears. This may be a feature of some very severe cases, or again, may be found in cases of long standing with an acute exacerbation.

Altogether the gland during the course of the disease presents the features of marked functional activity, evidenced by cell proliferation and formation of a thin colloid in considerable amount.

Turning now to alterations in other organs, we can say that there are none that are either constant or distinctive. Such as do occur can be accounted for by increased functional activity, such as the hypertrophy of heart.

The exophthalmos which occurs in about 75 to 80 per cent. of cases has received various explanations as increase of retrobulbar fat, which is Murray's (7) explanation. Spasm of Muller's muscle fibres is another explanation which has received considerable support; while still others ascribe this condition to the vascular congestion. As the exophthalmos does not disappear after death, Murray's explanation is the most rational, though no doubt others play a part of importance during the clinical progress of case.

To summarize the prevailing ideas of the etiology and pathology of this affection, up to the present the theory of Mobius has generally been accepted. This theory as more directly stated by Wilson (8) is as follows:—

"The development of Graves' disease may be formulated as follows:—(1) Following a metabolic, chemical or extra-organismal irritant, the thyroid-parenchyma proliferates, over functionates and may degenerate; (2) The histological process resembles simple adenomatous proliferation or that of an adeno-papilloma; (3) The severity of the symptoms depend on: (a) the amount of absorbable secretion; and (b) the patient's ability to neutralize this secretion.

This would make the condition purely one of over function of the thyroid, but I believe the explanation of Beebe and Rogers as formulated by latter in the discussion on this subject at the meeting of the American Medical Association in June last (1911), is more in accord with the present known facts of the bio-chemistry and pathology of the gland. As I have already stated, these investigators look upon the development of Graves' disease as a result of fatigue of an over stimulated thyroid, and I can best finish this discussion by a quotation from Dr. Rogers. "It is assumed, therefore, that in Graves' disease, fatigue damages the bio-chemical relationship of the epithelium with iodin and in an ineffective attempt to metabolize this element properly, the epithelium proliferates too rapidly and disintegrates, and instead of a colloid containing the normal proportion of iodized proteids, there results one in which there is an excess of one or more elements and a deficiency of others. Specifically there seems to be an excess of one, designated here as a nucleo-proteid, which is believed to activate only the chromaffin (sympathetic) system, and in the more severe forms of the disease a deficiency of the globulin component of the secretion, although in the milder forms of the disorder this also may be more or less abundant, but of inferior quality. In consequence of this excess of nucleo-proteid, the whole sympathetic nervous system which supplies secreting glandular epithelium is unduly stimulated, and one or more vicious circles are immediately started, which tend to perpetuate the process."

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RAYNAUD'S DISEASE WITH REVIEW OF A CASE.

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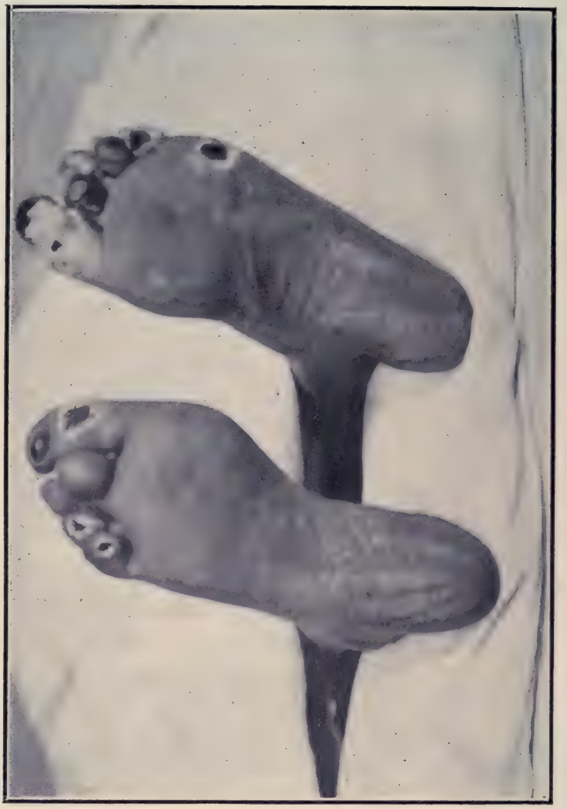
It was in 1863, that Raynaud published his first paper, describing a condition of dry symmetrical gangrene of the extremities, which he pointed out was due to defective innervation of the smaller blood vessels. Since that time this condition has borne the name of him who first described it.

Raynaud's Disease is a vascular condition confined chiefly to the extremities and characterized essentially by a symmetrical gangrene. The cause of the disease is not understood. It shows a preference for young females, especially those of a high strung, nervous temperment.

The disease is more common in damp and cold climates, and in susceptible individuals, an attack may be precipitated by exposure to unfavorable climatic conditions. On the whole, however, no special cause can be assigned, and the disease manifests itself in persons otherwise healthy.

The pathology of Raynaud's Disease has not been worked out satisfactorily. Certain structural changes of the blood vessels have been found, but these are by no means constant, and when present fail to account for the clinical findings. The changes in the vascomotor centres, the symmetrical distribution and the associated haemoglobinuria, are features which do not admit of ready explanation. In a general way it may be said that the condition is due to certain disturbances of the vasomotor mechanism, which manifest themselves locally in a more or less persistent ischaemia or passive hyperaemia, depending upon the calibre of the blood vessels. If the instability of the centre is not corrected, circulation fails to be re-established and necrosis or gangrene results.

After pointing out that the blood supply of the body is controlled by the vasomotor mechanism, which, by regulating the size of the blood vessels, determines the quantity of blood to be supplied to each part, Osler, in his system of medicine, very aptly compares the condition present to Raynaud's Disease, to the state of affairs that would exist in an irrigating system, should its central plant be placed in the hands of an amateur. " The machinery of the irrigation centre," he says, "is in charge of an experienced official who has not learned to work the sluices in proper response to the telephonic demands; he turns a full head of water into one of Mr. Epidermis' forms and forgets all about it, or he shuts off the supply from another, flooding the one, parching the other, and unless a call gets through in time to correct the mistake, death of the crops results." This is exactly what happens in Raynaud's Disease. The centres are at fault and work imperfectly.



The earliest and most prominent symptom of Raynaud's disease is the local syncope which attacks most commonly the fingers but also involves the toes, ears and nose. There may be five or six attacks a day, varying from a few minutes to an hour in length. The part takes on a dead white appearance and is cold and lifeless to the touch.

Following the local syncope is the stage of local cyanosis. The blood vessel walls have become relaxed and the capillaries are filled up with the back flow of blood from the veins. The part is usually of a mottled blue-black color and the finger nails almost black. Pressure with the finger tip causes an area of localized anaemia in which the circulation is slow in being restored. During cyanosis there may be some swelling of the part, but this is not a feature of the disease.

Depending upon the re-establishment of the circulation two results may follow the stage of local cyanosis. If the passive congestion persists and does not give way to an active hyperaemia, the finger or toe remains cold, the color becomes darker and necrosis results. The amount of tissue loss is usually not great at any one attack, but successive attacks may result in the loss of a considerable portion of an extremity. On the other hand, if there is recovery of the circulation after the stage of local cyanosis, the color begins to change from a deep blue to a light pink, the parts become swollen and hot, the radial pulse is full and strong, and the patient experiences a throbbing in the fingers or toes. The tone of the blood vessel walls is gradually restored and normal circulation is re-established.

Syncope, local cyanosis, followed either by active hyperaemia or gangrene is the usual course of events in Raynaud's disease. In some cases, however, gangrene or active hyperaemia may follow directly upon the local syncope, or the condition of local cyanosis may appear as the initial symptom.

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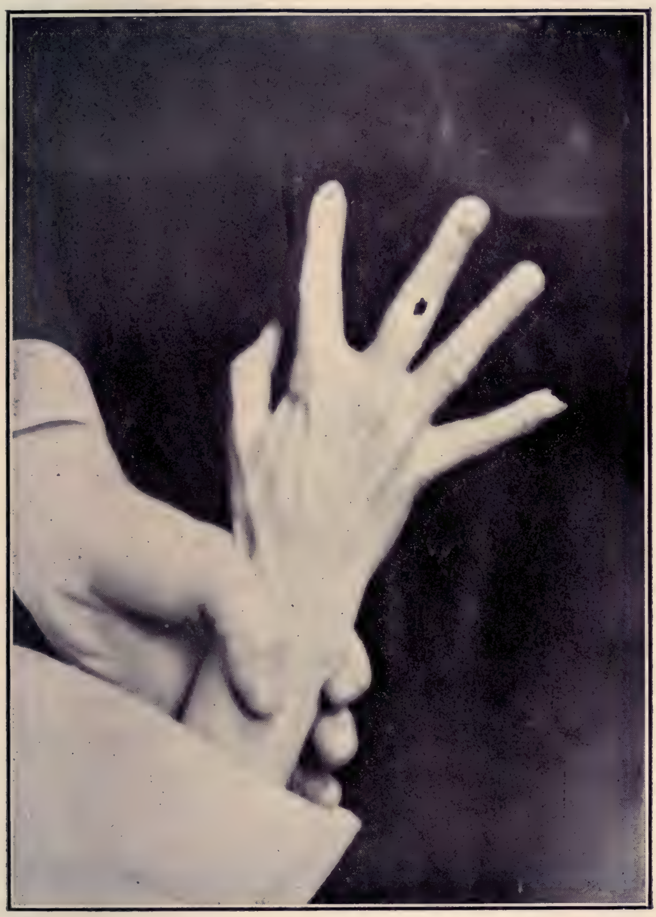
V. G., a female, was born in Western Ontario in 1879, and is, therefore, thirty-three years of age. At her birth the labor was difficult and prolonged and forceps were used. Three days after birth she took convulsions and was subject to them until six years of age when they ceased.

She did not get along well at school and fell behind her class. When twenty-three years of age she began to react to auditory and visual hallucinations. She also had delusions of a persecutory nature. In March, 1903, she was admitted to the Hospital for the Insane, London, and having shown some improvement was discharged in August, 1904. Three years later she again began to react to hallucinations and was re-admitted September, 1907, and has since remained in residence. During her stay at home she was operated upon for the removal of the left ovary which was cystic. For the greater part of the time she was very well mentally. She is evidently a case of Dementia Praecox, of the Hebephrenic type, her history, and her present indifference, lack of voluntary attention, and loss of memory, all combining to present a picture very typical of this disorder.

In December, 1911, she was put to bed because she had become very untidy and destructive in her habits. Shortly afterwards the patient began to complain of cold feet, she lay huddled up in bed and asked for more clothing. She did not complain of any pain. On January 16, 1912, the nurse reported a peculiar condition of the toes and on examination the feet were very cold and dark blue in color, the toes being almost black. Pressure with the finger tip on the dorsum of the foot produced an area of local anaemia which remained from ten to fifteen seconds. The patient did not complain of anything except that her feet were cold and numb.

Further examination showed a condition of local cyanosis in the hands and a small area of superficial necrosis in the back of the right middle finger as shown in the



photograph. At the upper end of the left ear there was also an area of superficial necrosis about one-half inch long at the border of the helix. (The photograph of this area did not show up well and the negative had to be retouched in order to bring out the spot.

In a few days it was apparent that the toes were to suffer in like manner. By referring to the photograph, which was taken at the time, it will be seen that the two great toes and the second left toe were most affected. They were hard, black, cold and dead. Though less extensively involved, the same condition could be seen in the tips of the remaining toes, except the middle one of each foot. These two toes were somewhat less cyanosed and the patient could feel a pin prick at the extremity of each. The patient began to complain more of pain in her feet and they were so tender that she could not put them to the floor.

I could get but little history from the patient. She told me she had been always troubled with cold hands and feet and the nurse on the ward stated that she had noticed that her hands and the tip of her nose were often of a deep blue color. There is no history of the stage of local syncope. At the present time the ears and hands show evidence of restored circulation. The eschar on the ear and the back of the fingers have separated and healing has taken place. The feet have remained more or less permanently cyanosed and the process of gangrene has continued until it can now be easily seen what will be the extent of the tissue loss. On the right foot the great toe and the tip of the second and fifth toes are gangrenous. The third and fourth toes have entirely escaped. On the left foot two-thirds of the great toe and the entire second are gangrenous and a line of demarkation has formed. There is a small superficial eschar on the tip of the fourth toe, while the third and fifth toes have escaped.

THE RELATION OF THE LABORATORY TO THE HOSPITAL.

Geo. F. Boyer, M.B., M.D., Toronto.

In my following remarks, I hope to outline briefly the routine methods in use at the Claybury Laboratory in its relation to the pathology of the Hospitals for the Insane of the London County Council. During the past year it was my privilege to work there under the direction of Dr. F. W. Mott, and to enjoy the exceptional facilities of the laboratory extended to voluntary investigators by the Asylums Committee. I should like to take this opportunity of expressing my sincere appreciation of those privileges, and of the great personal advantages of working under Dr. Mott's direction.

The London County Council controls some eight or ten large Institutions in the suburbs of London, and these in turn look to the bodily interests of some 24000 or 25000 persons in different phases of insanity and nervous diseases. Each of these hospitals is complete in itself as far as its pathological requirements is concerned, but autopsy material showing any particularly interesting condition is sent to Dr. Mott's laboratory at Claybury, and the detailed study continued· Thus there is a clearing house or a house of final appeal within easy accessible distance of the various institutions. Only on special occasions does Dr. Mott go to the other institutions for any pathological work.

The Claybury Laboratory is situated proximally to the hospital, and is a compact one-storey building, consisting of chemical and several histological laboratories, with library, reference, photographical, and store rooms, beside the Director's own private office and study. The chemical room is adequately supplied for routine or detailed chemical analysis. The work undertaken here relates usually to the pathological changes taking place in the brain and cord, especially during different phases of psychiatrical or organic brain disease. The histological laboratories are well lighted and fully equipped for cutting and staining tissue in any of the known methods to show different pathological changes. There is no room set apart solely as a pathological museum. In the rear of this building, some fifteen yards, is the cold storage plant which contains several rooms for the preservation of pathological specimens, for the autopsy room itself and for the preservation and viewing of the patients remains. The staff is composed of its Director (Dr. Mott) and his special pathologist, his pathological chemist, and three assistants doing regular routine work, as cutting, staining, and mounting sections, and other details of laboratory life. The laboratory receives many weekly and monthly pathological journals and reports from British, German, French and American centres of research. These are all bound and preserved in complete sets for reference in the library,

When a patient is admitted to the hospital, the friends or official guardians have to sign a paper before leaving, to the effect that in the event of death, an autopsy will be performed without any further consultation with them; unless they register a veto to this agreement and leave the same at the central office of each hospital. Probably in this way many autopsies are procured that otherwise would be missed; as the records show that in less than 5 per cent. of the deaths is an autopsy refused. After the patient's death, all the records of the case, which are bound in large registers, are transferred to the morgue, where the details are read and discussed before the autopsy is commenced. In all cases, Dr. Mott, or his pathologist conducts the proceedings and in all cases a complete examination is made with removal of the brain always, and if necessary, any accessory material which the particular case may require. The organs are weighed and the lesions described and recorded in large registers, from dictation at the autopsy table.

The registers for male and female patients are kept distinct. If the case shows any changes of an unusual character, the tissues are preserved and sectioned. In all cases the maximum attention is paid to the brain, and to the cord where the membranes are carefully examined, the convolutional pattern, the sulci, the grey matter, the ventricles, etc., etc., are all specially noted. If the brain shows any localized lesion from arterial or traumatic causes, it is carefully labelled, numbered and dated and preserved in 5 per cent. formalin solution and put aside for future study by some of the voluntary assistants, who present themselves at the laboratory from time to time. In this way there is always abundant material at hand, which is pregnant with interest to the investigator from the standpoint of pathology solely for purposes of localization of cerebral function. The two routine preserving fluids are 5 per cent. formalin and Muller's solutions. In this way any subsequent investigator always has ready at hand this material for any kind of investigation, by going to the central office of the hospital he finds there the large register containing all the clinical data; at the laboratory, he finds the description of the recent pathological changes and in the storeroom he will find the brain and any other pathological material thought advisable to preserve in connection with the case he intends to study. He then has his data for a satisfactory and fruitful enquiry into a concrete, pathological condition on the one hand, and an accurately reported clinical entity on the other; with the whole laboratory, library and Dr. Mott's ingenuity, ability and references ready at hand. Any one wishing to study different conditions, as for example, the changes in the middle ear, and auditory nerve in auditory hallucinations, or the cerebral patterns in familiar psychoses, both of which are being undertaken at the present time, can get here ample material and opportunity. The facilities of this laboratory which are at the disposal of the conscientious investigator are invaluable. He has at his elbow Dr. F. W. Mott and the chemical and histological laboratories to assist him in his labors.

It is not my intention to attempt to outline in their entirety the particular problems undertaken during my association with the Claybury laboratory, but the mentioning of a few should convey some idea of the detail that is pursued. The Wassermann reactions for the whole London County Asylums are done weekly or biweekly by the resident pathologist, and for this purpose the large number of animals are maintained on the premises. Wassermann reactions are done upon all suspects, of any syphilitic or parasyphilitic condition during the life of the individual, and accurate record is kept of the degree of actual change in the reaction, if any, and later when the case comes to autopsy, the cerebral spinal fluid and the serum are again tested and several pieces are removed for histological reaction and without any interchange whatever of results, the pathologist reports upon the several findings of the reaction and Dr. Mott reports upon the condition of the cerebral cortex. the one stating definitely if the reaction is positive, and the other stating whether the cerebral cortex is that of a general paretic or no. Results are most convincing and definite as shown by Smith and Candler (1) and later again by Candler (2) in cases studied from both the anti-mortem and post-mortem standpoints. There is thus no real difficulty in ultimately discriminating between the two general paretics and the active syphilitic brain disease, the premature senile decay, the lead poisoning psychosis and the alcoholic psychosis. The possibility of ultimately mis-diagnosing such cases is thereby practically eliminated. In this way one can graphically demonstrate the absurdity of perfunctorily calling one set of symptoms (a clinical entity) a concrete disease; and hence investigations similar to these tend to minimize our errors.

All instructive papers collaborated by Dr. Mott from the immense number of patients of the London County Asylums are products of the records of the geniological charts which are kept at the laboratory. By referring to certain genealogies one can most graphically study the effects of insanity, or of alcoholism, or of injury, as it exists to-day over an immensely broad field. In these, one can find the most interesting attempts of nature in trying to revert to the normal in different types of disease or her attempts at complete extermination of the affected families throughout the succeeding generations. Occasionally one also sees most interesting charts where some consanguinity is present, especially when upon an unhealthy stock. Here then, there are gathered together the genealogies of most of the interesting cases of the hospitals, and these are graphically shown by charts of different designs. I am not going to make mention of the work of the laboratory's Director, that amply speaks for itself. In this laboratory was done all his work on trypanosomiasis, upon the pathological changes seen in syphilitic and parasyphilitic brain diseases and upon many valuable concrete pathological conditions reported experimentally and clinically.

Unfortunately far too often the study of mental processes has been divided into three great classes, which are or should be, essentially one. Two classes however, which specially concern us in this brief resumé are those of the pathologist and clinician. It would only be in the ideal condition that alongside of the expert pathologist we have the expert psysiologist and co-equal, and thoroughly conversant with them both the trained clinician; all at work in the same institution and under the same conditions and cognizant with each others problem and data. Too frequently the clinician goes his way through the wards paying scant heed to the pathological section of his work, and perhaps not more unfrequently the pathologist wanders into his realms of hope, over fields unknown, without due consideration of the other aspect of his work which relates to the clinical. So we may have a long series of cases which are reported from the clinical or the pathological standpoint rendered of much less value merely because they are not relating to the same, and hence the clinician has not got the same opportunity to see where he erred nor has the pathologist the advantages of an accurate and detailed clinical examination. We have only to compare (to illustrate my contention), the number of cases of General Paresis reported clinically with a number of cases reported microscopically to see the effects of the uncombined labors of the pathologist and the clinician. By this I would suggest that the pathological frequently is not sufficiently studied with special reference to its bearing upon the concrete clinical findings in each particular case, and the explanation of clinical conundrums. Let pathological then not view the field from too chauvinistic a standpoint, and much more so let the clinician strive to broaden his knowledge by a thorough practical grasp of pathology.

The ideal condition might well be that when men think of the new hospital for the insane that they think not only of a large and commodious building with all modern equipment, a large staff of competent physicians and nurses, modern appliances for treatment, etc., but let them, make them, associate in their minds with those necessities, the modern pathological laboratory, fully equipped with arms outstretched, offering every facility to conscientious voluntary investigators, and make them disassociate entirely in their minds the dark, dust-laden room with its antiquated machinery too frequently seen there. Let them think of some great head of that laboratory well versed in all that is modern in the pathological world. Let them associate the laboratory with one man who with his followers dogmatically and strenuously pursues the study of the changes wrought in the human brain in the various psychiatrical and organic diseases; steadfastly endeavoring to rob old dame nature of some of her most treasured and most stubbornly retained secrets. The field appears limited, but undoubtly careful, chemical and histological investigation with the most improved methods is a modern laboratory may be expected to repay systematic study.

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DOES AN INSTITUTION LABORATORY JUSTIFY ITS EXISTENCE.

By Dr. R. R. Graham.

Assistant Physician, Hospital for the Feeble-Minded, Orillia.

In an address delivered at Rush Medical College, June, 1910. Dr. W. J. Mayo among other things gave this advice to the graduating class, " Write papers; they will do you much good, although at first they may not benefit anyone else." This coming from such an authority is my justification for the following.

At first it might be questioned whether individual institution laboratories were necessary when we have access to the provincial laboratory, which aids us by the examination of our sputa, swabs, typhoid bloods, milk and water specimens. Moreover, it might be said that previous to the more universal use of laboratory methods, former medical staffs were able to maintain a high standard of health in their institutions. Also that many country practitioners are doing most commendable work with a large percentage of recoveries without any laboratory equipment, relying solely on clinical methods aided by the examination from the provincial laboratory.

The above of course, are all quite correct and it is far from my intention to cast any unkind reflections on the work of former staffs or on any country practitioner, who possibly never had made or makes a blood count or complete urinalysis from one year's end to the other, to say nothing of the numerous other techniques possible when individual work in a laboratory is easily accessible.

But now let us think what a laboratory does for an institution. We have to work out the benefits derived from any one department on the relative benefits to the patient in order to arrive at its true value.

In the first place we have to realize the fact that if there is a laboratory adequately equipped at our ready disposal, there is given to the medical man a very great incentive to practice his art along scientific lines. Does this mean that he will—as has been suggested by some—develop into a faddist, and diagnose his cases in the laboratory without the proper association of clinical conditions? It means anything but this, and such I think is a most erroneous interpretation to place on the attitude of the laboratory worker.

Thus, if we grant the added incentive to better work, would it not also help us to see a broader field for our labors? True it is that no one man can be a specialist in all the different fields of medical work, and yet in our institution practice we are called upon to perform work involving nearly all these departments. So that when one looks over the patients confined in our institutions he is appalled by the amount of work awaiting his attention and is reminded of the dying words of Cecil Rhodes, "So much to do; so little done."

When we have a well appointed laboratory with everything in its place, how much more possible it is to cope with such a situation. For instance if a urine sample is submitted how often would a complete examination be made if we had to go to a drawer to try and find a few test tubes, a urinometer, to a shelf and find an alcohol lamp, to another drawer and find some litmus paper, to find our reagents which are carefully stored on a back shelf, to find a few slides and cover glasses, to screw the hand centrifuge to the office table and finally to dust the miscroscope before we could even start to make a test? In contrast with this you go to your laboratory, your materials are all convenient and readily accessible and you proceed at once without any delay due to searching which is such an impediment to good and thorough work. This is just one example of the many with which all medical men must be familiar.

Then from a standpoint of diagnosis how often have we to rely solely on our laboratory? Only recently was this clearly evident when a patient with progressive anaemia was presented for treatment, and on examining his blood there was found a marked increase in his white blood cells due almost entirely to the increase in the lymphocytes marking it clearly as a case of Lymphatic Leukaemia. Such a case could not be diagnosed with certainty without this aid, and without a proper diagnosis could proper treatment be given?

Again we have been guided repeatedly in our surgical cases by the white blood count, particularly the differential. In one case a patient who was unable to talk, and with the sense of pain markedly impaired, she was confined to bed at 11 a.m. with intense vomiting. Temp. 102, W.B.C. 13.200. At 3 p.m. Temp. 103, F. W.B.C. 16.300, at 5.30 p.m., Temp. 105F. W.B.C. 29.000, vomiting continuing all through. About 6 p.m. a slight rigidity of the right abdominal muscles was faintly palpable, yet coupled with the laboratory evidence was considered sufficient to warrant operation, which was performed at 8.30 p.m., the same day and an appendix removed which on microscopical section showed marked necrotic change—patient made a good recovery.

Would this have been done without the aid of the laboratory? What would the inevitable result have been were the operation not performed?

We found that the differential blood showed some

interesting features, where the polymorphs were largely increased there was usually pus, and often under pressure and where the large lymphocytes were increased in a patient acutely ill, gangrene was often found. In one case the large lymphocytes were 29 per cent. and around a very gangrenous appendix was a large gangrenous tumor of omentum.

Another technique is also at our disposal which often aids us in adopting proper treatment. Recently a tumor developed in a scar over a previous osteitis which on microscopical section proved to be an epithelioma. This knowledge aids us in directing our action along lines beneficial to the patient.

There is also another function that an institution laboratory can fill admirably and it is not of minor importance. It is a control of our water, and particularly of our milk supply. We have here established excellent dairy facilities and these are kept at a high standard by properties of the product, thus enabling us also to have an idea of the efficiency of our herd and the methods of handling the product.

Thus when we have used the laboratory in these ways, is not our curiosity often aroused by some particular combination of Laboratory and clinical findings which we try to satisfy by investigating fully similar cases? In doing this we open the field of medical and surgical research, and unconsciously what is the result to our patients? Surely no one will deny that this more thorough investigation of cases by means of a co-relation of laboratory and clinical findings will much more surely reach a correct diagnosis which is such an essential precursor to effective treatment.

Then we do see that the laboratory is an effective factor in the establishment of a higher health standard for our patients and thus enables them to live more effectively for themselves and for the institution.

Having justified the existence of a laboratory from the standpoints of the benefits to a patient, let us now view the situation in a more truly scientific light.

We have here untold advantages for medical and surgical research and why should we not avail ourselves of them? Is it not the duty of every medical man, if possible to add to the sum total of medical knowledge? Only too often do we come to the sick room to be " idle spectators of a sad ceremony and leave it humbled by the consciousness of the narrow limits which circumscribe the resources of our art." Possibly a large number of us will never attain that to which we aspire, but surely " It is better to have tried and failed than never to have tried at all."

It is self evident that to do effective research work we have to truly analyze our work microscopically as well as macroscopically, and in order to do this effectively laboratory facilities are essential. Here we have access to our patients from the time they enter the institution until they reach the post mortem table. We can then examine microscopically the various organs and can balance up our clinical and pathological findings which will often correct many preconceived ideas and act as a very valuable guide in treating future cases.

With a laboratory vaccine therapy and its possibilities are within our power and we here are making our vaccines and are in a position to record their effect and form our own opinions as regards the dose required, and to determine these conditions which respond more readily under antogenous than under stock vaccines.

Thus it would seem that individual institution laboratories were not only justifiable but essential. When one considers that it does not necessitate elaborate equipment, involving a heavy expenditure to secure results, would it not seem almost unjustifiable to be without this necessity? No doubt when this essential is more wholly appreciated and our scientific spirit is kept aflame, that every physician and surgeon, whether in the service or in private practice will diagnose and treat his cases by a co-relation of clinical and laboratory methods.

BOOK REVIEWS

THE CARE OF THE INSANE AND HOSPITAL MANAGEMENT.
By Dr. Page, Danvers State Hospital.

In this little work of 150 pages the writer has given a concise and comprehensive statement of the treatment of the insane, by Connolly's non-restraint methods. The writer points out that many hospital officials, acting only on a superficial conception of Connolly's practice, have regarded the elimination of mechanical appliances as the ultimate goal; whereas Connolly uses the term, "non-restraint" to characterize a comprehensive, non-coercive method of dealing with the insane.

The subject is treated from the standpoint of the hospital trustee, the superintendent, the assistant physician and the nurse, and contains many practical suggestions for so managing a hospital by kindness, patience, consideration and tact, that situations and conditions suggesting the necessity for restraint will never arise.

The book will be found intensely stimulating and interesting to anyone engaged in the care of the insane.

The author has added an appendix, in which he describes the management of a troublesome, maniacal patient, by substituting an elaborate system of deception for mechanical restraint. Many will prefer the latter method as being less harmful to the patient, and more in harmony with medical ethics. It is to be regretted that the one concrete illustration given to supply a clue to the method by which the rules and suggestions advanced in the main text may be applied, gives an entirely erroneous impression of non-restraint methods.

We can assure our readers that the book is well worth reading; but we would advise them to lay it down before they read the appendix.

E. H. Y.

Manual of Psychiatry. By J. Rogues de Fursac, M.D., Physician-in-Chief of the Insane Asylums of the Seine Department, France. Translated by A. J. Rosanoff, M.D., King's Park State Hospital, New York. Third American from the third French edition revised and enlarged. New. John Wiley & Sons.

The best evidence of the excellence of this work is the reception it has enjoyed and the appreciation it has been shown by those interested in the subject so deftly treated. That three editions have been called for since the book was presented attests its merit. The author has presented a work which as a manual will be a welcome addition to the library of the general practitioner, who has neither the time nor the inclination for perusal of the more comprehensive treatises on insanity. It is thoroughly up to date and deals most succinctly with the varied phenomena of mental disease. The description of the Wassermann reaction, now acknowledged to be an indispensable aid to diagnosis, forms an interesting chapter. The parts dealing with symptomatology and classification have been made clear and the progress made in recent years in psychiatry is distinctly indicated all through the book. The reader is impressed that the work has been improved by the translator, who has added many interesting sections and made this manual one that will be read with interest by all interested in psychiatry.

Sanitation of Public Buildings. By William Paul Gerhard. Published by John Wiley & Sons, New York.

This book, which is small but comprehensive, deals with a subject too little understood in these days when prevention of disease is receiving more attention than ever before. To those interested in public buildings having a permanent population, such as hospitals of all kinds, there is a fund of information. At the same time the sanitation of schools, court-houses, churches, etc., is carefully treated. The author divides his interesting subjects into chapters on hospitals, theatre, church, school and market sanitation. There is no other work of a similar character in which the subjects treated are taken up and presented in such a practical form. On that account the book is certain of the reception is deserves.

GUIDE TO SANITARY INSPECTIONS. By William P. Gerhard, C.E. Fourth edition. Published by John Wiley & Sons, New York.

The aim of this clearly written little volume is to outline broadly the main features of sanitary inspection work. The book is replete with instruction to the layman, the housekeeper, the superintendent of a hospital, and particularly to sanitary inspectors. It is surely a reliable guide in the search for sanitary defects.

SANITATION, WATER SUPPLY AND SEWAGE DISPOSAL OF COUNTRY HOMES. By William P. Gerhard, C.E. 325 pages. Price, $2.00. Published by D. Van Nostrand Co., New York.

The opening chapters deal with the greatly neglected subject of general sanitation of country homes, and an interesting comparison is shown of life in the city and in the country from a health point of view. The essential requirements for healthy country homes are well set forth. The question of how to procure and safeguard water supply is carefully discussed. The best methods of sewage disposal for houses without sewer connections are described in such a manner as will make this book valuable. Such a manual so full of valuable information and suggestions telling "what to do" will be received with favor.

HEREDITY IN RELATION TO EUGENICS. By Charles Benedict Davenport. Henry Holt & Co. $2.00 net.

In this work the author sets forth in a clear and comprehensive fashion the intimate relation existing between the inborn potentialities and tendencies in an individual, and like characteristics in his antecedents. At some length in the opening chapters he elaborates by diagram and photograph, the principle of heredity influence. His conclusion is, that an individual is what the determiners in his two fused germ protoplasms (paternal and maternal) have developed into under the culture which they have experienced during their development. Hence, from this view arises the conclusion that disease, capabilities and tendencies are all due to inciting conditions acting upon a susceptible protoplasm.

The author recommends the general establishment of a Clearing House for Heredity Data, where the State would keep records concerning family traits. By this means could be located those strains which show an inherent tendency to certain diseases and anti-social traits. The recurrence of undesirable characteristics could then be prevented by denying those tainted individuals the right to marry. The writer does not make clear, however, how he plans to overcome the usual forces which lead up to marriage at the present time, irrespective of many obvious taints.

While probably of chief interest to the biologist and physician the book should find a place in the hands of the intelligent general reader to whom the clear comprehensive style and freedom from technical terms will appeal.

THE FEEBLE MINDED. By E. B. Sherlock, M.D., B.Sc., Lond. D. P. H., Barrister-at-Law, formerly Superintendent of the Belmont Asylum for Idiots, and lecturer in Biology in the Westminster Hospital Medical School.

The author of this work, which was published in 1911, is from personal experience well equipped to deal with the subject, both from a practical and scientific point of view.

The earlier chapters are concerned with the anatomical and physiological facts, which are believed to be correlated with psychological happenings. Such facts as belong more particularly to those special departments of biology, which are known as pathology, etiology and taxonomy is considered in its legal, medical and educational bearings.

Possibly, the one criticism of the work is, that it is too scientific. However, to those wishing an accurate and concise treatise on such a broad subject, this will be its strongest recommendation.

F. L. N.

EXAMINATIONS OF NURSES AT ONTARIO HOSPITALS FOR THE INSANE.

The annual examinations in connection with the Training Schools for Nurses at the Ontario Hospitals for the Insane were held last month. The following were successful:—

HOSPITAL FOR THE INSANE, TORONTO.

Junior.

Duma Pell, Maggie McVittie, Mae Chambly, Bella McVittie, Marjorie Ingram, Elsie Gilbert, Emily Gilbert, Jennie McVittie, Meta Parker.

Intermediate.

Hazel Beatty.

Senior.

Irene Heaslip, Evadine McCutcheon, Margaret McDowell, Hazel Beatty.

HOSPITAL FOR THE INSANE, MIMICO.

Junior.

Ellen Jane Robertson, Marion Morris, Marie Piche, Wilhemina McDonald.

Intermediate.

Lottie Harris, Emma Johnston, Georgina Anderson, Marie Piche.

Senior.

Esther Dyer.

HOSPITAL FOR THE INSANE, HAMILTON.

Junior.

Sarah T. Weir, Gertrude Kemp, Annie Mooney, Lucelia Harrison. Jennie Perry to take Anatomy and Physiology.

Intermediate.

Sarah Ann Goldie, Florence Kennedy, Nora C. Jarvis, Florence Dunlop, Mae Mooney, Laura Topping, Mary Wilson, Mary Weir, Helen Turpin, Jessie Smith, Olive Plank, Florence Pownceby.

Senior.

Margaret R. Cameron, May Sharp, Agnes McGregor, Cassie L. Shaw, Sadie Plank.

HOSPITAL FOR THE INSANE, LONDON.

Junior.

Rosa Bell, Mabel Chapman, Lizzie Gunn, Annie Mason, Nellie McGarity, Ethel Robson, Eliza Robson.

Intermediate.

Jennie Bailey, Viola Clipperton, Jessie Martin, Olga Strong.

Senior.

Mary Atkinson, Florence Ball, Lizzie Flynn, Margaret McGee, Kate McGarity, Mrs. Margaret Gifford, Ada Barfitts.

HOSPITAL FOR THE INSANE, KINGSTON.

Junior.

Sara Payne, Massie McLeod, Mae McIntyre Gertrude Hughes, Marguerite Canning, Christina Payne, Marion Jennings, Rosella McGrath, Jennie Nichol, Mary Wilkins, Lillie Belanger, Kathleen Murphy, Gladys Leslie, Hattie Seeley, Margaret O'Brien.

Intermediate.

M. Seeler, Eva Marsh, Margaret Redmond, Frances Strong, Esther McGrath, Ella McGuire, Lula Nicholson, Lizzie Rutter, Dollie Black, Lydia Le Claire. Evelyn Laundrie to take Anatomy and Physiology.

Senior.

Helen Slade, Mae Kirkwood, Katie Murray, Alice Patterson, Mary A. Seeler, Kate Jennings.

HOSPITAL FOR THE INSANE, BROCKVILLE.

Junior.

Jennie Gibson, Irene Race, Robena Simpson, Katharyn Burns, Ella Sly, Mrs. Annie Rand, Myrtle Wiltse. Nellie McCaffrey to take Anatomy and Physiology.

Intermediate.

Annie Sheridan, Mabel Slade, Annie Moriarity, Lea Dussiaume, Elizabeth Wellcoat, Gertrude Freestone, Alice Craig, Alma Anderson, Lottie Dowd.

Senior.

Leita Frink, Edith Towsley, Susan McCaffrey, Minne Mallette.

The examinations of Primary and Intermediate candidates are both written and oral and the Final examinations are oral. The course of training is three years and the course of instruction is that adopted by the American Hospital Association. In addition, there is a course of instruction in Nervous and Mental Diseases.

The following were the papers for the Primary and Intermediate candidates:—

JUNIOR EXAMINATIONS.

ANATOMY AND PHYSIOLOGY.

All questions of equal value.

Note.—Only five questions to be answered.

1. What organs constitute the circulatory system? State the chief difference between coats of veins and arteries.
2. What comprise the nervous system, and what are the chief divisions of the brain?
3. Name the excretory organs of the body and give the excretion from each organ.
4. What is the Retina? Its function? What is the Tympanum? Its function? What is the Conjunctiva? Its function?
5. What changes take place in the blood as it passes
    (*a*) through the capillaries in the lungs;
    (*b*) through the capillaries in the muscles?
6. What and where are: Sciatic, Acetabulum, Uvula, Appendix, External Malleolus, Pinna, Atlas, Tendo-Achilles, Mastoid cells, Suprarenals.
7. Name the different digestive juices and tell in what parts of the Alimentary Canal each juice comes in contact with the food.
8. What bones enter into the formation of the pelvis?

MATERIA MEDICA AND BACTERIOLOGY.

All questions of equal value.

Note.—Only five questions to be answered, in which must be included one of the three last.

1. Mention five ways in which medicines may be taken into the circulation.
2. How would you make a normal salt solution?
3. Define and give an example of:
    (*a*) an anodyne;
    (*b*) an emetic;
    (*c*) a diuretic;
    (*d*) a disinfectant;
    (*e*) an antipyretic.
4. Define an Anæsthetic. Name the common local and general anæsthetics.
5. Give the chief use and adult dose of morphine, castor oil, spirits ætheris nitrosi, atropine, and strychnine.
6. What are the natural defenders of the body against disease?
7. Name a well known
    (*a*) serum;
    (*b*) vaccine;
    and for what purpose is each used.
8. Describe the methods by which any two of the following contagions may be conveyed: Typhoid Fever, Tuberculosis, Erysipelas, Smallpox.

GENERAL NURSING.

All questions of equal value.

Note.—Only five questions to be answeerd.

1. What precautions are necessary to prevent bed sores?
2. How would you make:
    (*a*) 1 in 20 boracic solution;
    (*b*) a starch poultice;
    (*c*) a stimulating enema.
3. How would you prepare and apply the following:
    Turpentine stupes,
    Mustard leaf,
    Ice cap.
4. What precautions must be taken in the use of the catheter?
5. What should guide you in choosing a sick room and at what temperature should it be kept?
6. What means could be used to induce sleep without the use of drugs?
7. What dangers are to be guarded against in giving a hypodermic injection?
8. What precautions would you take in giving a cleansing sponge bath?

INTERMEDIATE EXAMINATIONS.

MEDICINE AND TOXICOLOGY.

All questions of equal value.

Note.—Only five questions to be answered, in which one of the last two must be included.

1. (*a*) Name the different kinds of pulse and respiration.

   (*b*) How does fever terminate? Define the terms.

2. How would you give artificial respiration?

3. (*a*) What are the complications of typhoid fever?
   (*b*) What nursing measures may be used for the same?

4. (*a*) What nursing measures may be used for hemorrhage from the stomach and the lungs?
   (*b*) Differentiate these conditions.

5. What are the most important things for a nurse to do in caring for a case of pneumonia?

6. (*a*) What is meant by the suppression of urine, retention, and incontinence?
   (*b*) What is the specific gravity of normal urine?

7. Describe the treatment of carbolic acid poisoning.

8. Give different methods of producing emesis in a person who has taken poison.

SURGERY AND MASSAGE.

All questions of equal value.

Note.—Only five questions to be answered, in which one of the last two must be included.

1. Give six methods by which wounds may become infected.
2. Name measures for prevention of wound infection, the preparation of hands, sutures, instruments, etc.
3. Give four points to be remembered in applying a roller bandage.
4. Describe the sterilization of dressings and the precautions necessary to keep dressings sterile during an operation.
5. The physician notifies nurse that he wishes to perform a lumbar puncture on a certain patient, what preparation should be made by the nurse?
6. Give causes and symptoms of gangrene of foot.
7. Name four conditions where massage would not be permissible.
8. What beneficial effects are produced by massage?

PSYCHIATRY AND HYDROTHERAPY.

All questions of equal value.

Note.—Only five questions to be answered, in which one of the last two must be included.

1. Explain the following terms as employed in Psychiatry:
    - Hallucination,
    - Delusion,
    - Catalepsy,
    - Stereotypy,
    - Euphoria.
2. Describe the treatment of a case of Delirium Tremens.
3. Describe an epileptic seizure.
4. What are the duties of a night nurse in a hospital for mental diseases?
5. What particulars of convulsions should be noted and recorded?
6. Mention some of the important points to be remembered in the restraint of patients.
7. In what ways is water used externally as a therapeutic agent?
8. What are the effects of a prolonged warm bath on pulse, temperature, respiration, and blood pressure?

GENERAL NURSING.

All questions of equal value.

Note.—Only five questions to be answered.

1. Briefly describe method of preparing and administering a hot sterile douche.
2. Tell how to sterilize rubber tubing for drainage.
3. What precautions must be taken with each of the following in nursing an infectious disease:
    (*a*) discharges and excreta;
    (*b*) linen;
    (*c*) utensils;
    (*d*) nurse's hands.
4. How would you sterilize instruments before an operation? How would you clean instruments after an operation?
5. What temperature would you give a vaginal douche to control hemorrhage? Mention three other methods you would employ to control uterine hemorrhage while awaiting the arrival of a physician.
6. How would you prepare a room for a major operation in a private house?
7. Describe the preparation of patient for gynæcological examination?
8. A patient is seen to be choking, what should the nurse do?

The members of the Board of Examiners have reported to the Provincial Secretary that after three years' experience in conducting the annual examinations of Nurses at the Hospitals for Insane in Ontario, there is most gratifying evidence of general improvement, not only in the systematic arrangement now existing for imparting instruction to the Nurses, but there is very direct evidence that as the result of the instruction given there is most marked improvement in the methods of caring for the sick and providing such with every facility likely to bring comfort to the patient and hasten recovery. The result of having a uniform course of instruction and having the examinations conducted by a separate Board of Examiners appointed each year by the Provincial Secretary has proved of great value and has fostered and developed a spirit which three years ago was unknown. The result is not only better trained nurses, but greatly improved hospital methods in the case of the Insane in Ontario.

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